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09/972,368	10/05/2001	Jin H. Hwang	5440P002	4726

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EXAMINER
KIM, KEVIN

ART UNIT	PAPER NUMBER
2634	

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>05 October 2001</u>.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-49_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1,2,7,15-20,27-33 and 41-44_ is/are rejected.

7)☒ Claim(s) _3-6,8-14,21-26,34-40 and 45-49_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>05 October 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed
> in the United States before the invention by the applicant for patent or (2) a patent granted on an application for
> patent by another filed in the United States before the invention by the applicant for patent, except that an
> international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this
> subsection of an application filed in the United States only if the international application designated the United
> States and was published under Article 21(2) of such treaty in the English language.

2.   Claims 1,2,7, 15,17-19,27-30,32,33,41,42,44 are rejected under 35 U.S.C. 102(e) as

being anticipated by Mejia (US 6,625,241).

Claim 1.

Mejia discloses an apparatus (see Fig. 2), comprising:

1) a buffer (203) to receive a data stream (105) which is written to the buffer according to

a first clock signal k (see col. 6, lines 21-23).

2) a character monitor (205) coupled to the buffer (203) to monitor the occurrence of an

inter-packet gap in the data stream containing removable filler characters and identify the

removable filler characters in the buffer (see col. 7, lines , lines 4-6).

3) a channel controller (208) to read data from the buffer according to a second clock

(104) and transmit it over an output channel (209), wherein the channel controller skips

transmission of one or more of removable filler characters s marked as removable within

an inter-packet if the first clock is faster than the second clock.   See col. 7, lines 60-67 in

particular. See also col. 6, line 65 – col. 7, line 28 describing that fill words are deleted

from transmission when an overflow condition is detected, which happens when the input clock is faster than the local output clock.

Claim 2.

Mejia discloses an exemplary buffer comprised of two buffers, one at Local Sync (102A) and the other (102B), see Fig. 1, thus storing two sets of characters.

Claim 7.

Mejia discloses the buffer as a first-in, first-out type. See col.7, lines 16-17.

Claim 15.

It is well established that synchronizers in digital communication are built on an integrated circuit.

Claims 17 and 41.

Mejia discloses a method of synchronizing the transmission rate of a first clock to the transmission rate of a second clock (see Fig. 2), comprising:

1) receiving sets (105A and 105B in Fig.1) of one or more characters over an input channel synchronized by the first clock (see col. 6, lines 21-23).

2) buffering the sets of the received characters (see 203).

3) transmitting the buffered sets of characters over an output channel synchronized by the second clock (101).

4) skipping transmission of a set of characters marked as removable within an inter-

packet if an overflow condition is detected (see col. 6, line 65 – col. 7, line 28 describing

that fill words are deleted from transmission when an overflow is detected).

Claims 18 and 42.

As explained above, the sets of one or more characters are received and buffered "per

first clock cycle."

Claim 19.

As explained above, two sets of one or more characters are transmitted "per second clock

cycle."

Claim 27.

Mejia discloses a synchronizing system (see Fig. 2), comprising:

1)means (105A and 105B in Fig.1) for receiving sets of one or more characters over an

input channel synchronized by the first clock (see col. 6, lines 21-23).

2) means (203) for buffering the sets of the received characters.

3) means (209) for transmitting the buffered sets of characters over an output channel

synchronized by the second clock (101).

4) means (208) for removing one or more sets of filler characters from the output data

stream if an overflow condition is detected (see col. 6, line 65 – col. 7, line 28 describing

that fill words are deleted from transmission when an overflow is detected).

Claim 28 and 29

Mejia discloses means (205) for detecting an inter-packet gap within the input signal and fill words. See col. 7, lines 4-6.

Claim 30.

Mejia discloses means for removing one or more sets of filler characters from the output data stream if the first clock is faster than the second clock. See col. 7, lines 60-67.

Claim 32.

Mejia discloses an exemplary transmitter comprised of two transmitters, one at Local Sync (102A) and the other (102B), see Fig. 1, thus transmitting two sets of characters per second clock cycle.

Claim 33.

Mejia discloses means for removing one or more sets of filler characters from the output data stream if the first clock is faster than the second clock. I.e., the detection of a overflow condition in fact indicates differences between the baud rate of the input signal, i.e., the first clock signal, and the local clock signal, i.e., the second clock signal. See col. 7, lines 60-67.

Claim 44.

According to Mejia , the fill words are by definition "removable characters" in that they

are inserted/removed for sync purpose.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

4.   Claims 20, 31 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Mejia as applied to claims 17, 30 and 41 above respectively and in view of Vila et al (US

6,757,348).

Mejia discloses all the claimed subject matter except for marking a set of one or more

characters as removable "if it contains one or more filler characters and follows a set of one or

more filler characters in the input signal."   In other words, while Mejia removes fill words when

an overflow condition is detected, the claimed invention further requires the removal of the fill

words if they follow another set of fill words.

Vila et al teaches that a fill word is not deleted if there are only the minimum number of

fill words according to some protocol and continues that the number of fill words is identified in

the inter-frame space and, if necessary, removes the fill words after a delay, i.e., removes fill

words that follows the minimum number of fill words in the inter-frame space.

Thus, it would have been obvious to one skill in the art at the time the invention was

made to mark a set of one or more characters as removable if it not only contains one or more

filler characters but also follows a set of one or more filler characters in the input signal in order

not to delete the minimum fill words between frames required in some protocol as taught by Vila

et al.

5.   Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mejia as applied

to claim 1 above.

Mejia discloses all the subject matter claimed except that "the first and second clocks

have a maximum rate difference of one cycle per one thousand cycles." In other words, Mejia

describes that the baud rate of an incoming data stream could be slightly faster than the

frequency of the local clock (see col. 7, lines 61-63) but fails to quantify the rate difference.

However, since the minimizing the rate difference is preferable, the setting of a maximum rate

difference (including "one cycle per one thousand cycles" in the claimed invention) is an obvious

matter of design choice, particularly in that applicant has not disclosed the criticality of setting

the claimed maximum rate difference of one cycle per one thousand cycles.

Allowable Subject Matter

6.   Claims 3-6,8-14,21-26,34-40,45-49 are objected to as being dependent upon a rejected

base claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

Conclusion

7.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

Rude (US 6,415,006) discloses synchronization between read and write clocks using a

buffer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y Kim whose telephone number is 571-272-3039. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).